The Life and Times of WILLIAM HENRY JACKSON

Photographing the Frontier

Trains helped push the frontier west, and William Henry Jackson's cameras showed them in action—here snaking along the Denver & Rio Grande line in Colorado's San Juan Mountains. He added color for lithographic printing by the Detroit Publishing Company, in which he held an interest.

An artist, veteran of Gettysburg, Oregon Trail bullwhacker, world traveler, and writer, he lived 99 active years spanning dynamic changes in his nation and matching the first century of the new science called photography.

COLORADO HISTORICAL SOCIETY

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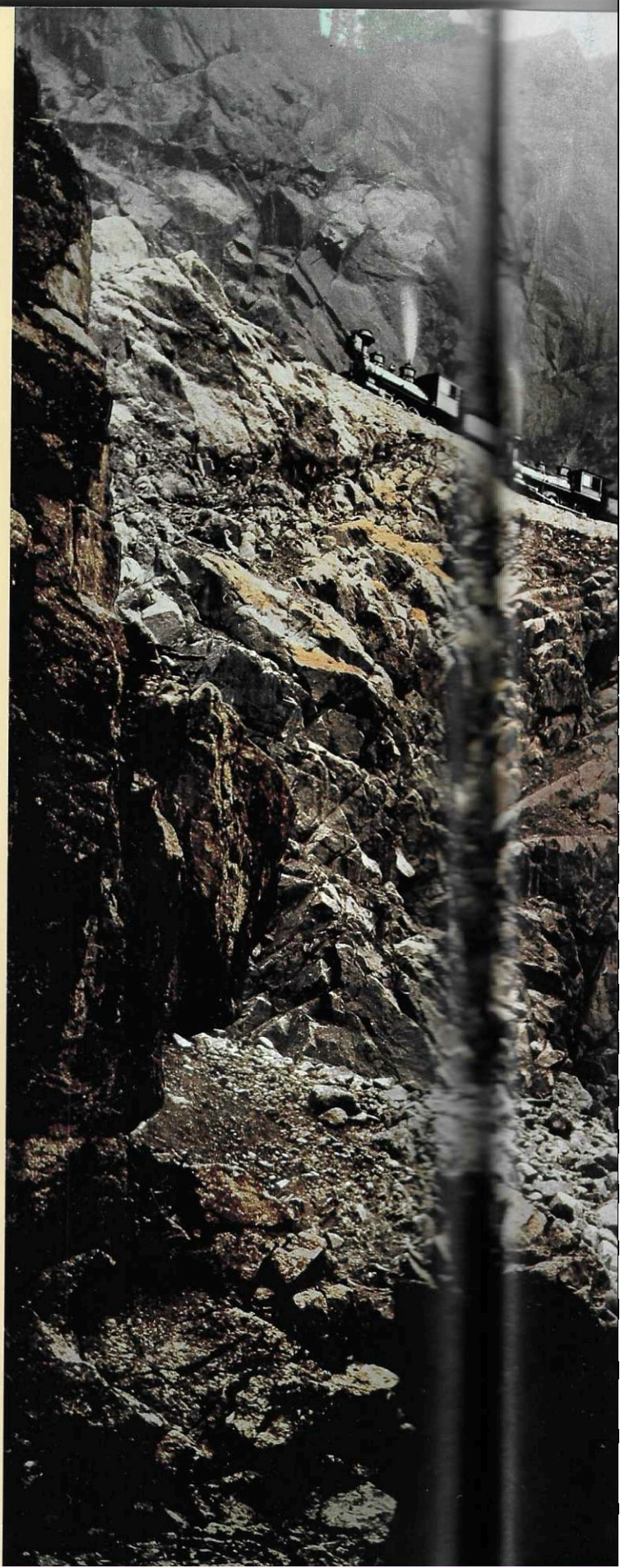

STILL SECURE in their ancient ways, Shoshone-Bannock pose for Jackson in their

tribal encampments to reservation house raisings, index their transition from

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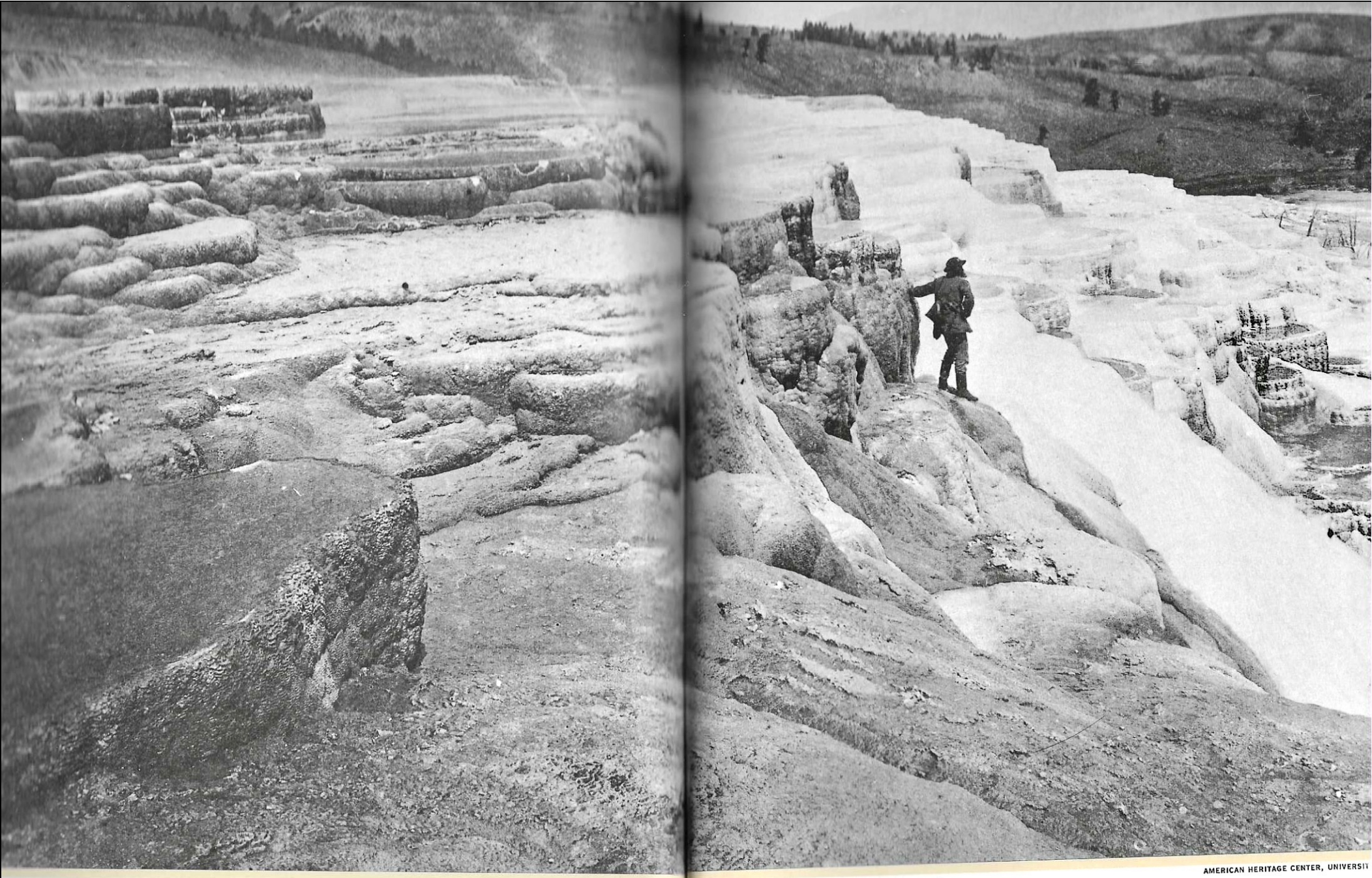

AMERICAN HERITAGE CENTER, UNIVERSIT

VAPOR-WREATHED TERRACES of Mammoth Hot Springs introduced Jackson to Yellowstone, whose legendary wonders drew the U. S. government's Hayden Survey in 1871, with Will as official photographer and landscapist Thomas Moran as part of his picture. Abundant hot water hastened on-the-spot developing. Jackson photos and Moran color sketches of Yellowstone's geysers, caldrons, and awesome gorge influenced Congress to make the area the world's first national park in 1872.

CHALLENGE was a constant in the typical working day of pioneer photographer William Henry Jackson. He liked it that way—the cumbersome wooden cameras and glass plates a challenge to pack across a wilderness, the temperamental wet-plate process a challenge that was never reduced to mere formula, the uncharted mountains, canyons, and rivers that challenged endurance and reduction to known places on a map.

For most of the 1870s Jackson's cameras served the Hayden Survey, an official agency commissioned to remove the uncharted label from some of the West's most glorious scenery—the Teton and Wind River Ranges, the San Juans, Colorado's central Rockies. His photographs of Yellowstone, the first widely published, made his name known and erased decades of disbelief, prompting Congress to create the world's first national wilderness park. Jackson's longevity—nearly a century—gave him time to fight a Civil War, court three women and wed two, leave us some 30,000 scenes of our world from Latin America to Siberia, and capture the frontier on his artist's easel. He had a nose for opportunity, a zest for tomorrow's tasks that drove him on.

All of that I understood about this trim, blue-eyed, multitalented man who was also writer, bullwhacker, wrangler, lecturer, winner of countless photographic prizes, and sometime player of the flageolet. What I didn't understand, with a bias fed by fatigue, was his fondness for oxygen-poor high places.

That question stood uppermost in my mind on a Colorado day when the visible world was a few finite yards of dripping spruce, dark lichened rock, and ever upward trail. The slick underfooting soon had me puffing like a steam engine. How much farther could it be to Half Moon Pass, I wondered, and would Mike Foster be waiting there as planned?

I was on one of Jackson's multitudinous Western trails. With luck I'd emerge above this atmospheric soup before reaching the 11,600-foot pass and a high vantage beyond on

SEEKING high places for his panoramas, Jackson, kneeling, set up this 1872 shot in the Teton Range to show how it was done in the field—darkroom tent ready for developing glass wet plates on site, a complex process. Much of the West first became known through the eye of his cameras.

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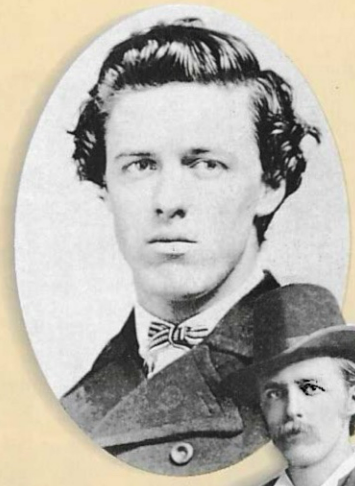
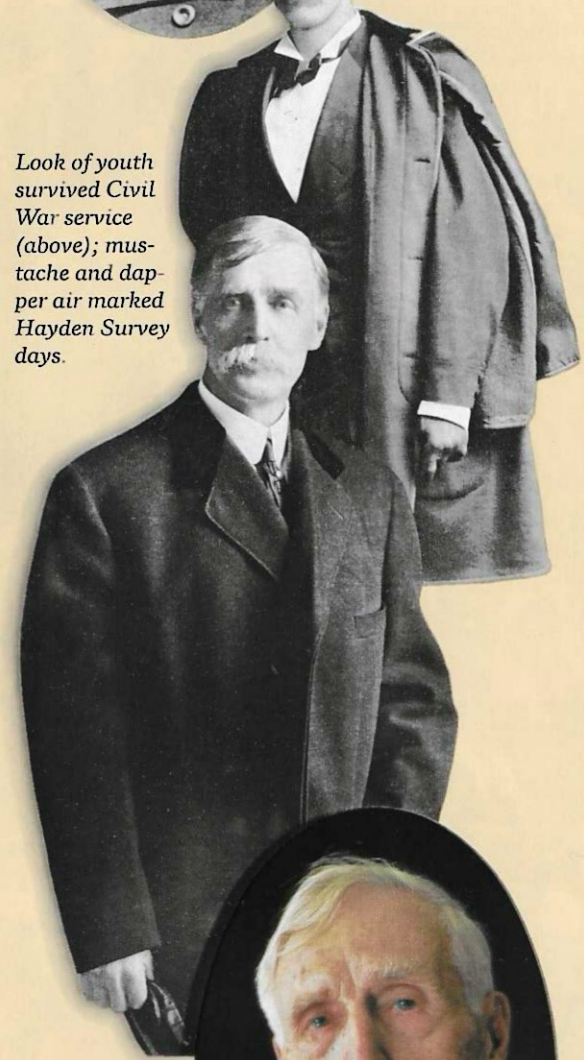
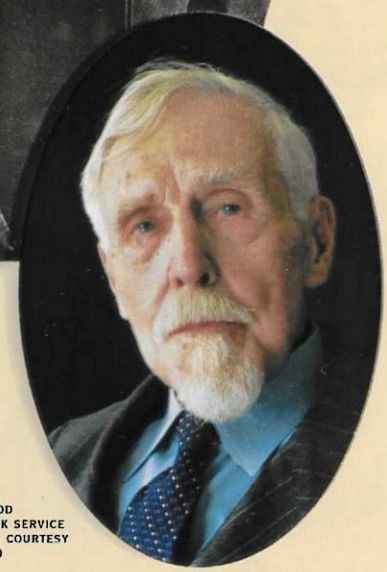
Four seasons of life



Look of youth survived Civil War service (above); mustache and dapper air marked Hayden Survey days.





Distinguished maturity came with later years in Detroit; newfangled Kodachrome caught active 90s.

COURTESY FRANCES MCLEOD (TOP TWO); NATIONAL PARK SERVICE (CENTER); MAX GIESECKE, COURTESY CARL BLAUROCK (BOTTOM)

Notch Mountain. From there I could view the Mount of the Holy Cross, with its namesake configuration of snow, on the anniversary date of Jackson's first glimpse of it 115 years ago—August 23, 1873.

The Mount of the Holy Cross is now just one of Colorado's 54 peaks over 14,000 feet, but in Jackson's day it was a tale old trappers told. For years there had been stories of an elusive mountain with a vertical slash on its face that held a 1,500-foot upright of snow, with a proportionate snowy crossarm. You could see it from Grays Peak, but upon approach it always vanished into a skyline maze, as into a warp of misty time. Its evanescence raised questions in Jackson's mind as he and two assistants backpacked 120 pounds of photo gear upward on that murky long-ago morning.

The question in my mind had to do with my endurance, softened as it was by threescore years in an oxygen-rich sea-level environment. The weather was a question both to Jackson's party and to ours: Would the cloud curtain part and reveal the scenic prize?

Dr. Mike Foster, historian and a leader in the Colorado Mountain Club, resolved his impatience over my deliberate pace by hurrying ahead to locate a plaque marking the site of Jackson's 1873 photographs.

The story of the Holy Grail had come to Jackson's mind as he struggled upward through clouds: "No man we talked with had ever seen the Mountain of the Holy Cross. But everyone knew that somewhere in the far reaches of the western highlands such a wonder might exist." Distant sightings had led

HAUNTED by his lost love, Will kept memories of Caroline (Caddie) Eastman fresh with this ambrotype (right), found among his things at death. A belle of Rutland, Vermont, she rejected him after a quarrel in 1866, some say because he recklessly overturned a buggy. The emotional upset sent Will to the West and fame as a pioneer photographer, but with his artist's pencil he limned the life that might have been. The cameo portrait vanished for years, then turned up at Brigham Young University Library, thanks to persistent research by photographer Jim Amos. Hidden inside were lines penned at the betrothal of a union that would never be: "Now all young men take pattern by this / And soon obtain its same sweet bliss / For Caddie's now a blooming bride / With Willie standing by her side."

BACKGROUND SKETCH COURTESY NATIONAL PARK SERVICE

him to this mist-laved ridge where he "emerged above the timberline and the clouds, and suddenly, as I clambered over a vast mass of jagged rocks, I discovered the great shining cross dead before me, tilted against the [opposite] mountainside."

But before his teammates could arrive with his photographic kit, the cloud curtain fell for the day, and the crew descended to a foodless, blanketless night around a campfire below timberline to wait out the weather. When the next dawn broke clear, Jackson reclimbed the ridge, set up, and made eight exposures during the ideal brief moments when illuminating sunlight interplayed with depth-defining shadow—another instance of Jackson's lifelong luck of timing.

My timing was not that lucky. The enveloping clouds delayed Mike's site quest and our rendezvous until midafternoon when the mists swirled apart long enough to give us a tantalizing partial view of the elusive cross. But the slanting light failed, and next day's forecast promised more wet gloom, and so with that glimpse we had to be content. But I had gotten another meaningful measure of Will Jackson's indefatigable photographic enterprise.

JACKSON WORKED in an era when photography was still a primitive and uncertain science, but its images carried conviction. Yellowstone, the Mount of the Holy Cross, and Anasazi ghost cities were stellar entries in his vast catalog of photographic firsts—including vanishing Indian tribes and their ways, raw-lumber mining towns with no more permanence than a line squall, and everywhere the railroads that were changing everything. In Wyoming he recorded spike-driving crews laying America's first ocean-to-ocean railroad; in tsarist Russia he photographed convict laborers laying the first rails across Siberia.

His 99 years gave him a recall that spanned an uncle's homecoming from musket warfare with Mexico and Japan's aerial attack on Pearl Harbor, that knew oil-wick lamps and electrical incandescence, jolting stagecoaches and airline in-flight dining.

And his 1843-1942 life span approximated the first century of photography—that beachhead science that visually records the world around us. His birth came only four years after people first marveled at fragile daguerreotypes; he learned photography largely as a

MUSEUM OF NEW MEXICO

Yellowstone's dependable Old Faithful geyser challenged Jackson's cameras. He called this 1872 shot his best.

HE FIRST SAW the high plains and sky-held peaks as a 23-year-old bullwhacker on the Oregon Trail; he last saw that far country on a summer sortie in his 99th year. In between, the American West, stretching from the Missouri to the Pacific, became the special province of Will Jackson.

Initially his consolation prize for losing Caddie, the frontier lured him to a new life and called him back again and again.

The West of William Henry Jackson

While learning hard lessons as a greenhorn ox-team driver in 1866, he first heard from old mountain men of the legendary Yellowstone country, instilling from that moment "a longing to go there." Though later travels showed him much of the world, nothing matched the "delightful memories" of those earlier years in the West. With his cameras, paint box, and diaries, he left us a valued record of his delight.

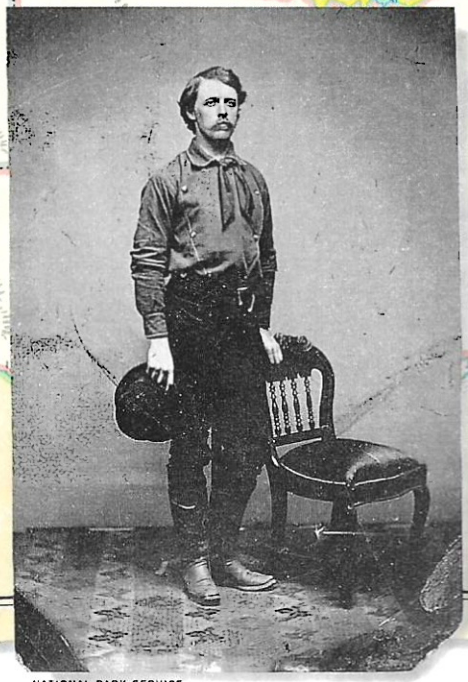
"New wonderland" called Yellowstone stirred "tremendous enthusiasm" in Will, who photographed it for the Hayden Survey in 1871, '72, and '78. The survey also assessed its thermal spectacles and inventoried its flora and fauna, transforming it from far-fetched story to natural preserve.

The Union Pacific and Central Pacific, in a track-laying race to complete the first transcontinental railroad, made headlines after the Civil War. In 1869 Will, now with his own studio in Omaha, could ignore it no longer: "I was eager to be on the road again and with my camera make a record of what was happening."

The Oregon-California Trail—the road west for a third of a million pioneers—was Will's road to a new life. He painfully learned to crack a bullwhacker's whip over a 12-ox team hauling supplies to gold miners in Virginia City, Montana.

Mesa Verde area cliff dwellings became real to the public with the printing of Jackson's 1874 photographs. He visited many living pueblos and ancient ruins over the years, including Hovenweep, which he named, adapting an Indian phrase meaning "deserted valley."

Boots and bandanna completed Will's outfit for taking to the trail in Hayden Survey days.



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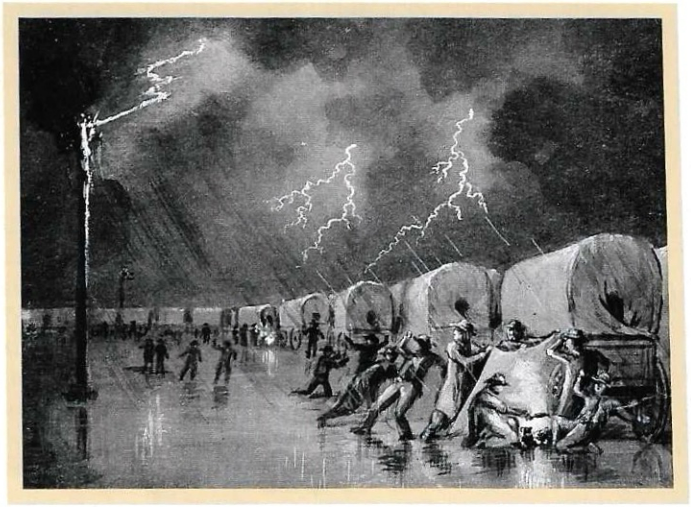
teenage retoucher looking over the shoulder of early portraitists; he took his historic Western pictures mostly with the fickle collodion wet-plate process; he lived to see the age of reliable color film, the ubiquitous Kodak, the 35-mm Leica. "If I'd had one of these on the Hayden Survey," he is said to have remarked in 1939, "I'd have made many more pictures and lived longer." Reaction to his first sight of an automobile: "What a fine way to get around with a camera!"

AN ARTIST first and last, Will sketched Civil War comrades making tents snug against the snow. His talent won him the assignment of depicting Army life, a task he embarked upon with, he admits, "a little swagger." As a bullwhacker he painted frontier scenes, including a wagon train beset by storm and lightning, a bolt striking the first transcontinental telegraph line.



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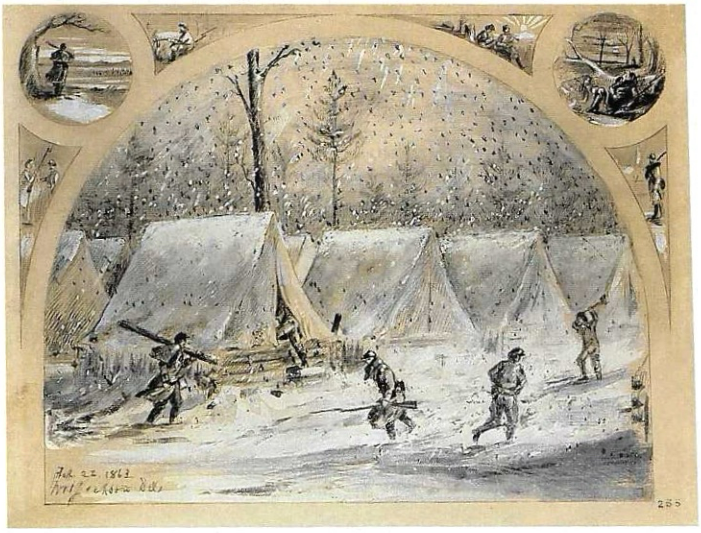


DIARIST EXTRAORDINARY, Jackson left journals covering almost a third of his long life, a library in itself (facing page). Soldier and lady adorn his Civil War diary, and the opened journal at center details his resolve in his 80s to organize his days so he could accomplish more. The trove is in the New York Public Library's manuscripts section.

In his 90s he became a delightful anachronism, amazing the world with a hand still steady enough to turn out scores of historical paintings, legs sturdy enough for Colorado's 12,000-foot passes, a mind able to construe a 341-page autobiography called *Time Exposure*. As his birthdays mounted toward the century mark, each became a festive salute, often celebrated at the New York Explorers Club, of which he was a life member, and with congratulatory cards and telegrams from across the country. When he died, on June 30, 1942, he was laid to rest to a litany of honors in Arlington National Cemetery, and a World War II Liberty ship soon carried his name; yet in our own time Americans have largely forgotten who he was.

FROM HIS early years Jackson had a very clear notion of who he was. The first of seven children born to George Hallock Jackson and Harriet Maria Allen in Keeseville, New York, he grew up with a sense of place and family derived from Quaker forebears. His were uncelebrated folk, except for one relative who gave Will the claim to being a real live nephew of his Uncle Sam.

Uncle Sam Wilson, actually Will's great-granduncle, was a supplier of meat for the Army in the War of 1812. His casks of beef and pork were stamped "U. S.," and when people

WORLD-CLASS ICE PALACE, 450 feet long with 90-foot towers, rose over Leadville, Colorado, in 1895-96. A civic promotion after the panic of '93, the project was thwarted by a mild winter and early thaw.

asked what the initials stood for, the facetious reply, according to Jackson, might be: "What! Don't you know Uncle Sam Wilson? Uncle Sam's a great patriot, and he's feeding up the army to lick the British." The story grew, and ultimately inspired cartoonists like Thomas Nast to evolve the lanky, chin-whiskered gent in plug hat and swallow-tailed coat. A monument over Uncle Sam's grave in Troy, New York, celebrates his unique place in history.

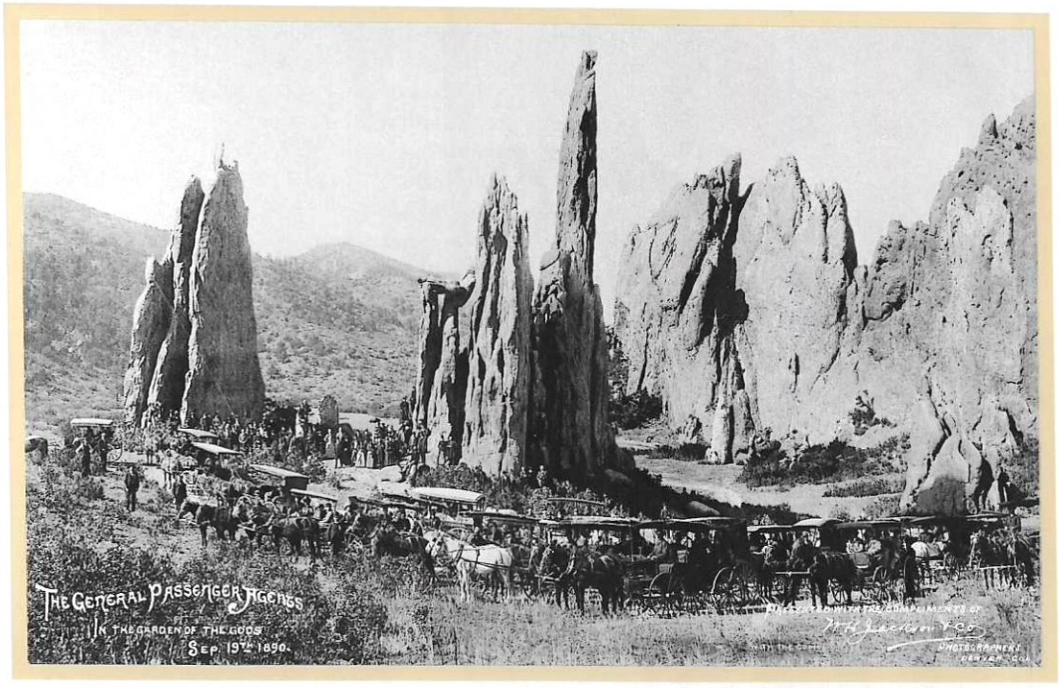
Jackson's place in history was presaged early. His father, a blacksmith and carriage maker, was fascinated for a time with daguerreotypy, and old camera parts became playthings for Will, who innocently "got the feel of a camera almost before I could walk." And his mother discerned in her firstborn some of her own artistic talent and put pencils and brushes in his hands: "I can hardly remember the time when I didn't draw pictures."

Jackson's father had a restless spirit that took the family to Georgia, Virginia, and Philadelphia before settling near Troy. There teenage Will put his artistic talent to work painting scenic designs on window screens, a fad of the times; soon he was hired as a retoucher by Schoonmaker's studio, giving him his first instructive insights into the new mystique of photography.

A better job at Mowrey's studio in Rutland, Vermont, diverted Jackson from the firing on Fort Sumter and the Civil War. But by August 1862 young Will was ready to enlist. "God knows that the country needs men," he wrote in the first of many diaries. He was mustered into Company K, 12th Vermont Volunteers. By November he was on picket duty "very near the rebel lines" south of Alexandria, Virginia; he would spend a winter, spring, and half a summer doing the Army shuffle, gradually moving west to Centreville and beyond, with cannonading now to the right, troops engaged to the left, but Company K peculiarly immune—that Jackson luck. He and his buddies foraged for persimmons, cabbage, sweet potatoes to add savor to Army pork and crackers. In tedious practice to speed musket loading, he could laugh at himself: "Blank cartridge drill today; fired away my ramrod."

His kit for soldiering included india ink

GARDEN OF THE GODS at Colorado Springs was a frequent backdrop—here for a ticket agents' gathering. From his Denver studio Jackson shot any marketable scenic view and sought profitable railroad assignments.



COLORADO HISTORICAL SOCIETY (ABOVE AND OPPOSITE)

and sketching paper, with which he soon was turning out pictures of camp that impressed his company commander, who gave him a new job—to depict Army life. He rummaged wartime Washington for art supplies, ranged picket lines and company streets with brushes and portfolio, was briefly detained as a suspected spy while sketching rifle pits.

Late June 1863 found the Union's Virginia troops being yanked out of the line and headed north, by regiments and brigades, in response to Lee's thrust into Pennsylvania. On sore, weary feet the 12th Vermont pressed past Frederick City, Maryland, and Catoctin Furnace, through drenchings that flooded roads ankle-deep, to pause and load guns July 1 "within three or four miles of Gettysburg."

But again that Jackson luck: While the First Vermont marched on into battle, Will's 12th was detailed to fall back and guard baggage trains. On the climactic third of July, noted Jackson, "We rested all day," and on the fourth they unloaded and cleaned guns, endured another thunderstorm, and took charge of 2,300 Rebel prisoners for escort to prison in Baltimore, where the 12th's nine-month enlistment ran out. His country honorably served, Jackson heard no inner call to reenlist; he went home to a valedictory review in Brattleboro before the governor.

In Vermont his life settled into an idyllic track: employment at Styles' Vermont Gallery of Art in Burlington as a photographic retoucher at a princely $25 a week! He learned a taste for brocaded waistcoats and beaver hats, for camaraderie with young male peers who secretly named themselves the Social Sardines, with young females who joined in amateur theatricals, literary readings, and Sunday excursions. Best of all, he had a fiancée in Rutland, "pretty and vivacious" Caroline (Caddie) Eastman, "the belle of the town." Souvenir sketches by Jackson depict the carriage rides, steamer cruises, lakeside picnics that figured in his present, the growing old gracefully in bucolic New England that he visualized for his and Caddie's future.

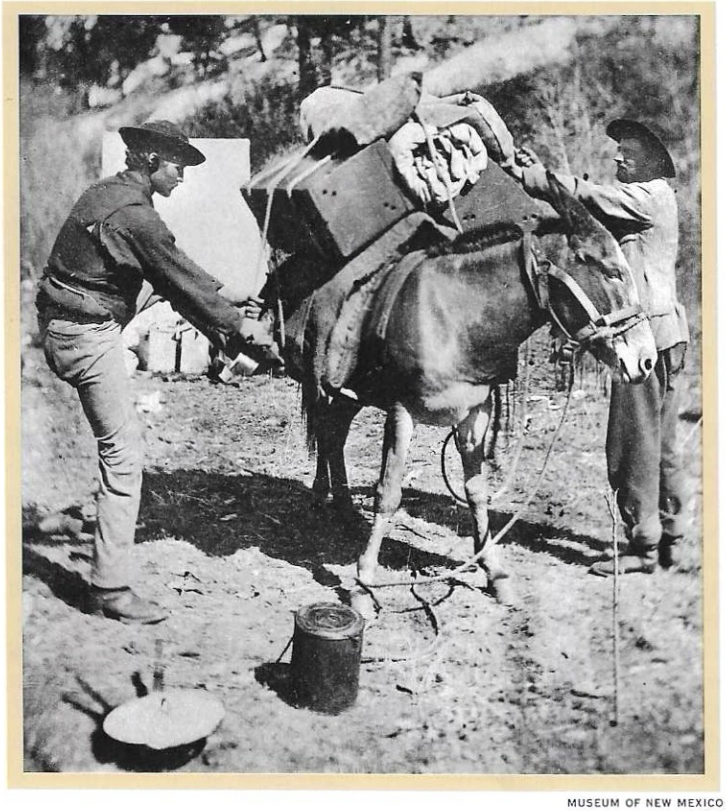
But such was never to be. In April 1866 there was a lovers' quarrel: "She had spirit, I was bull-headed, and the quarrel grew."

Dismissed from her favor, he left Vermont without good-byes to anyone, alone on a night train, his life a shambles—something to run away from. But it was this fierce hurt that sent him west to a life of high adventure and lasting accomplishment. That Jackson luck again.

Except for his weight of sadness, Jackson traveled light: "Picked out a couple of shirts, a pair of socks & a hdkf; put on my best coat and heaviest boots. Kept just one photo of C., an enlarged copy, which I carefully treasured next to my heart—for a while." (Later he lined out the last-mentioned confidence in his diary, but a picture of Caddie would be found with his effects when he died 76 years later—to the astonishment of his family and friends.)

In New York City, his thoughts already on the West, Will found ready partners in an old Company K friend named Ruel (Rock) Rounds and a friend of Rock's, Billy Crowl. But they could afford second-class tickets only as far as Detroit, where Will learned what it means to go broke; he was charitably allowed to sleep in a police station. As he curled up in a blanket on a broad windowsill, he considered his change of circumstances: "What would acquaintances say? The position struck me as being decidedly ludicrous and I had quite a little laugh all to myself over it."

Finally reaching Chicago, Jackson found work as a sign painter, then as an art instructor, earning enough to help the trio by late June 1866 reach St. Joseph, Missouri, where rail lines ended and Western trails began. Answering a "Teamsters for the Plains" ad got them jobs driving a freighter's ox teams hauling food, sundries, and whiskey to Montana goldfields, just the place for down-on-their-luck lads to pick up a fortune and go home in glory.



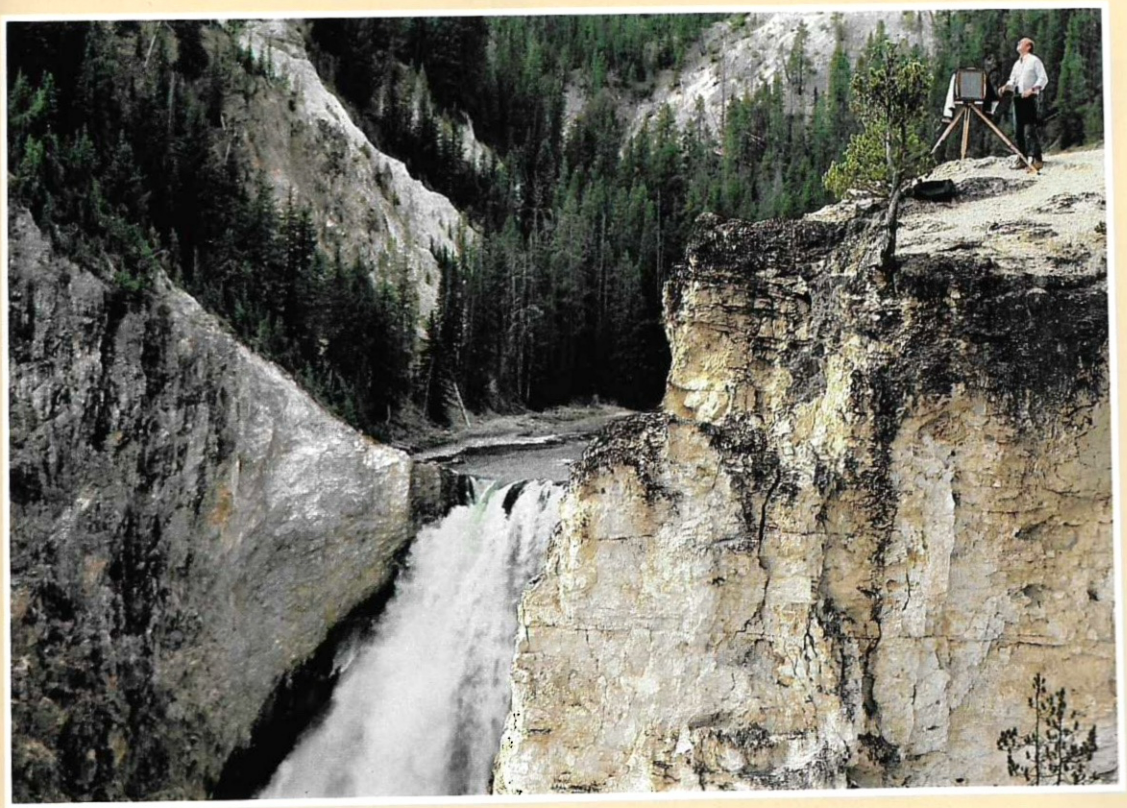
MUSEUM OF NEW MEXICO

SUREFOOTED MULE Old Mag braces against the cinching of a top-heavy load of photo gear, which sometimes included the 20-by-24-inch camera that Jackson was first to use in the Rockies. Top-heavy Mag was once saved from tobogganing down a mountain by lodging against trees; another time she fell off a cliff and landed on her back in a scrub cedar, which sprang her out on her feet on the switchback below. Hauling heavy gear to high places made it "strenuous work . . . to keep everything right side up."

THE WAGON TRAIN would assemble at Nebraska City, a three-day upriver run for the side-wheeler *Denver,* which was entertainingly crowded with fellow adventurers and Mormon families.

The first day's hitching up of the 12-ox teams became agony for Jackson. He was handed a heavy wooden yoke and pointed toward his "wheelers." "Now I had never yoked a steer in my life & was not certain whether 'gee' meant turn to right or left." He watched an experienced hand and imitated, going for his "leaders," "pointers," and other pairs, while 24 other drivers tried the same thing with some 300 animals, many of them "half wild Texan steers." It was noon that first day before the train could roll, and Will found he had nerve endings he had never suspected and a talent

Photographing in the Frontier Mode



USING 19TH-CENTURY techniques, photographic historian Doug Munson duplicates the wet-plate process Jackson knew. In a dark tent Doug coats glass with viscous collodion prior to dipping it in silver nitrate to make it light sensitive. He rushes the plate to his camera, previously focused on Yellowstone's Lower Falls, and makes an exposure. Then he hurries back to his tent to develop the glass-plate negative (right) before it dries and loses sensitivity. Like Jackson, Doug got mixed results, from failures to fine images. Like Jackson, he responded to challenge and built success on field experience.

for cursing his "bull-headed" charges that shocked him: "As long as I drive oxen I do not see how I can avoid it entirely. It comes of itself & I cannot keep it back."

Despite long treks and dust that cracked lips until they bled, he found time to fill his pad with sketches of a bearded wagon master, of a fellow bullwhacker cracking his 18-foot whip over his plodding team, of the evening circle of wagons beneath wide skies: "Away out upon these open boundless plains, one has a sense of almost perfect freedom."

By the time he reached western Nebraska, Will was a seasoned bullwhacker, leading his train through Mitchell Pass to a camp beneath towering Scotts Bluff. The campsite was relocated by Jackson himself in 1938 at age 95. Merrill Mattes, a leading Oregon Trail historian who was then superintending the Scotts Bluff monument, told me about it: "Jackson came through on his annual Western trip as research secretary of the Oregon Trail Memorial Association. He talked about leading his train through the pass in 1866. I asked him to show me where he camped, and we hiked over there, and he hopped around from one little hummock to the next, finally saying, 'Right here.' So I took a picture of him driving a stake to mark it. Now there's a plaque there."

In Wyoming, Indians preoccupied the bullwhackers. It was a violent decade, leading to campaigns that would crush the Plains tribes forever. The Army in 1866 required that wagons go in trains of 300 for protection. There were swift attacks here and there.

On August 17 Jackson's train rumbled past Deer Creek Station and camped beyond: "On the morning of the eighteenth, just as we were rolling out, flames suddenly shot up behind us. A few minutes later the telegraph operators and a mail rider galloped by shouting 'Indians!'—a band of braves had swooped down on the station at daybreak and set the place on fire. At least three men were killed and scalped. The survivors were on their way to sound the alarm at the military post which lay just ahead. For the first time since leaving Nebraska City all our Spencer carbines were brought out, ready for action. But we saw no redskins." It was that Jackson luck again: "According to rumor the Indians are raising the very deuce all about us & I think rather singular we don't see something of them. We hear of Forts taken & stations burnt, but they don't happen to come our way."

That luck held throughout Will's Western travels. Near Fort Bridger he elected to leave the Montana-bound train and visit the City of Saints by the Great Salt Lake, where he joined a train bound over the Old Spanish Trail to Los Angeles. To earn his way back east, he signed on to help herd 200 half-wild mustangs to a railhead in Julesburg, Colorado, thence to Omaha. Horses were wealth to the Indians, and stealing them was a mark of bravery, yet they did not bother Jackson's party, who got the horses through with minimal losses.

FROM OMAHA Will might logically have returned to his native East and picked up the threads of his life there; he had put enough time between himself and his great loss to face the past. Yet he had no sooner arrived in Omaha than a job offer waylaid him. A photographer hired him as a colorist and retoucher; then came a chance to buy out the studio. Jackson's brother Ed arrived to run the firm, and Will felt free to yield to his chronic wanderlust.

There were three-day trips to photograph the Osage on the great rolling hills south of Omaha, four days to record the Pawnee to the west. He fitted a buggy chassis with a darkroom for fieldwork. His pictures found markets locally and through dealers in the East.

Such outings merely whetted Will's hunger for new places. That yearning fixed on the ever lengthening Union Pacific Railroad as tracklaying gangs drove west in a race with Central Pacific crews working east: "It is almost impossible to exaggerate the contemporary influence of the first transcontinental railway." "Here was something truly earth-shaking, and, whether or not there had been a dime in it for me, sooner or later I would have been out on the grade with my cameras." By June 1869 he and assistant A. C. Hull were ready to leave Omaha by rail with cameras and portable darkroom box, on a trip that would produce an order for 10,000 stereoscopic prints.

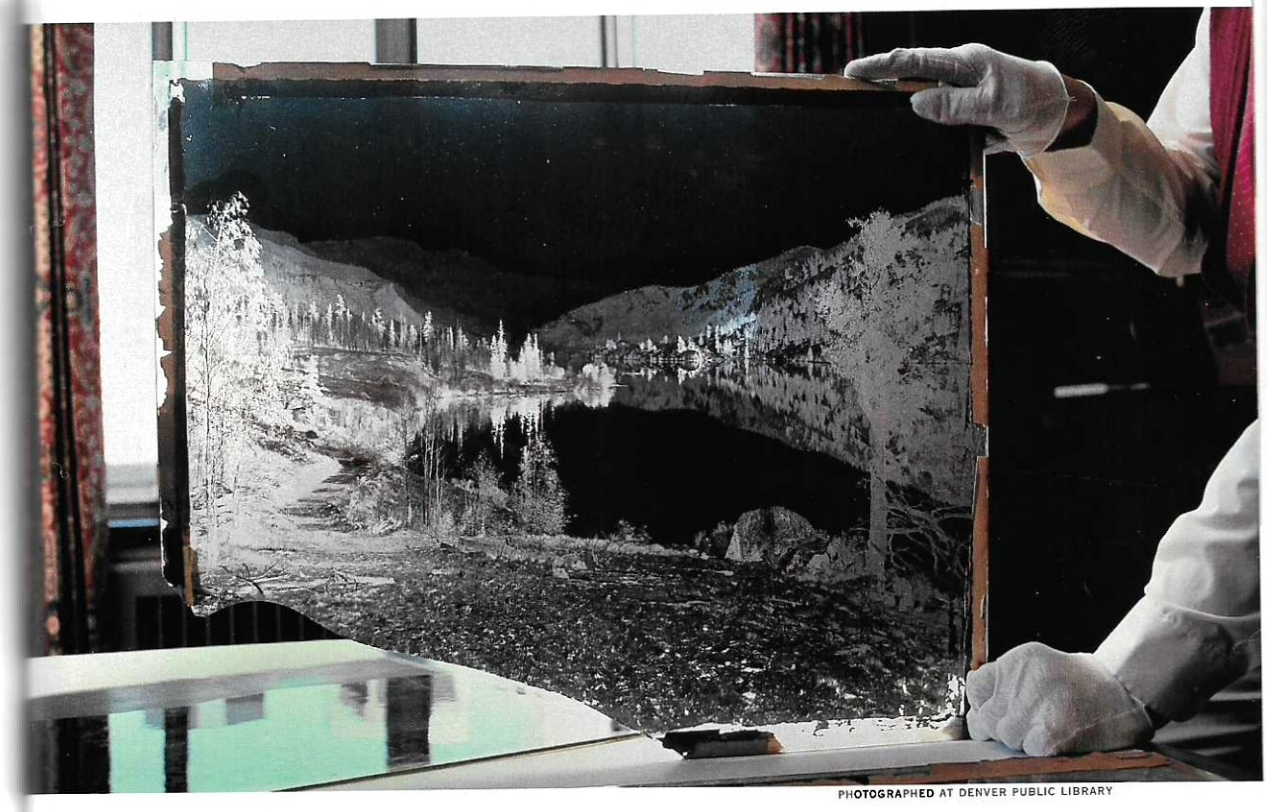
But for a romantic hitch they might have left sooner—in time to photograph the historic wedding of the rails at Promontory, Utah, on May 10 of that year. "My bride had chosen that date for her wedding day." The romance had developed swiftly after Mollie Greer of Warren, Ohio, had visited relatives in Omaha. An idyllic honeymoon cruise to St. Louis left Jackson with an obvious bias: "There is nothing like a Missouri River steamer!"

His first westward stopover from Omaha was Cheyenne, an untidy town that didn't exist when he returned from California just two years earlier. Travelers found it well provided with enterprising houses that offered liquor, gambling, and women under one roof.

For elegance the top establishment was Madam Cleveland's. Will heard that her ladies were "pretty solvent" and might like some photographs: "Hull and I thought we would go around and see if we couldn't get a job out of them. Talked it up a while but they seemed indifferent. I called for a bottle of wine, and soon after they began to take considerable interest in having a picture taken. Had another bottle, and then they were hot and heavy for some large pictures to frame and began to count up how many they should want."

Presumably to deliver finished prints, Jackson called at Madam Cleveland's two evenings later and "was much surprised to see Dr. Hayden come in with some military friends." "Hayden" was Dr. Ferdinand V. Hayden, a physician by training but an able field scientist by inclination and experience, and officially a geologist of the United States. Will noted that "he acted like a cat in a strange garret." But the encounter must have gone well, for the next summer Hayden was in Omaha, admiring Jackson's Indian and landscape photographs and remarking, "This is what I need."

In his fourth year of leading official surveys in the West, Hayden depended on an annual appropriation from Congress, in competition with other surveys. In Jackson's photographs he saw a way to win support. He offered to take Jackson along that summer as official photographer—no salary, just expenses. Jackson waited only long enough for wife Mollie's smiling assent before accepting. Thus his life took the final turn on a course that over the next decade would place him and his camera in many lofty vantage points on the leading edge of discovery and exploration.



PHOTOGRAPHED AT DENVER PUBLIC LIBRARY

THE REWARD of packing large cameras was a larger, more dramatic picture—the best way to get one before the days of enlargers. This 20-by-24 glass negative of Lake San Cristobal in Colorado's San Juan Mountains may have been the first he ever made in the field. Jackson believed the bigger camera was "worth all the extra labor it cost." The lake was created some 700 years ago by the massive Slumgullion slide.

A good mixer with an easy smile, Jackson fitted in comfortably with Dr. Hayden's ever changing field parties of scientists, wranglers, and cooks. There were regulars like executive manager James Stevenson, whose expertise with logistics and people kept the survey on track. There was "Potato John" Raymond, named for his frustrations in trying to boil potatoes to palatability at 12,000 feet. There was astronomer and mapmaker Henry Gannett, who later would become chief topographer of the U. S. Geological Survey and a founder and President of the National Geographic Society. There was multitalented William Henry Holmes, geologist, artist, and anthropologist, who shared a coincidence of name, interests, and lifelong friendship with Jackson.

There were also one-season members like noted landscapist Thomas Moran, another lifelong friend, and C. Hart Merriam, only 16 in 1872 but already a keen ornithologist. He would become first chief of the U. S. Biological Survey and a trustee and vice president of the National Geographic Society. Many of the survey's alumni went on to high attainment.

The survey work was not all transits and plant presses; some days it was all slogging and slipping over steep trails in dreary weather just to get to a place to do some work. There was the day in camp that they got up a mule race, and Will's white mule Dolly lost, so he stood drinks all round from a nearby brewery and tavern, civilization's only amenity in that part of Colorado. There was the summer when James T. Gardner's field team got pinned down by sniping Indians and narrowly escaped up a cliff, while Jackson's party innocently traveled in safety a score of miles away—that Jackson luck again.

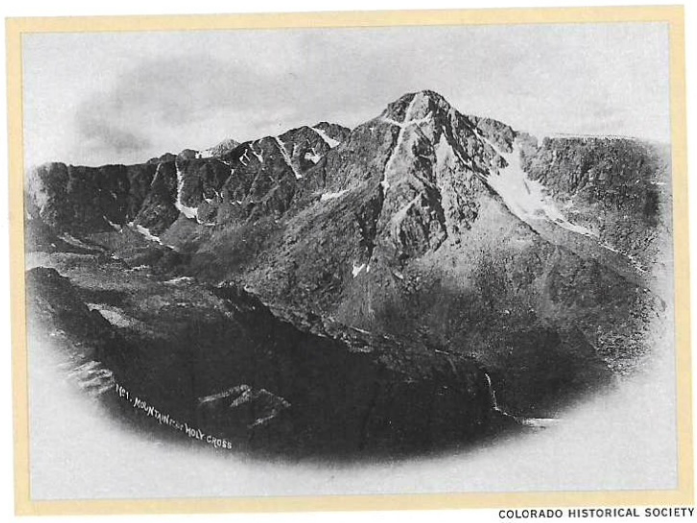
BUT WITH THE WOMEN in his life—those he truly cared for—his luck too often failed. In February 1872 his wife, Mollie, died giving birth to a daughter who lived but briefly. Years later he would refer to these events as still too painful to write about. From the field in '73 he was writing earnest letters to Emilie Painter, daughter of a Baltimore physician and from a Quaker family like his own. In October 1873 they were quietly married at her brother's home in Cincinnati, the start of a 45-year union that brought a son and two daughters. But his memory now held two faces dear to him whom fate had taken away.

There had been consolation during the summer of '73 in getting those first photographs of the Mount of the Holy Cross. At first it looked like bad luck: A pack mule named Gimlet had "slipped his pack," dropping and breaking Will's exposed plates, much of his summer's work. But Will doubled back on his trail, reshot his pictures, often with improved results, and arrived at cloud-plagued Holy Cross at just the right moment, "when every condition was close to perfection." His photos caught the public fancy, appearing on many a parlor wall like icons of faith, inspiring Longfellow to reminisce on the wife he had lost: "There is a mountain in the distant West / That, sun-defying, in its deep ravines / Displays a cross of snow upon its side. / Such is the cross I bear upon my breast / These eighteen years, through all the changing scenes / And seasons, changeless since the day she died."

Jackson found good medicine in his summer field trips with their unfolding of new horizons. Colorado's San Juans in 1874 lifted Will with "the grandeur of the mountains and of the cañons and the cascades, which seemed to drop from out of the sky. . . ."

Also absorbing were lingering snowfields across the trail, precipices perilous to man or mule (one mule did fall, miraculously landing upright and unharmed on a switchback below), sudden storms atop mountains, so electrically charged that, in the words of topographer Franklin Rhoda, "When we raised our hats our hair stood on end, the sharp points of the hundreds of stones about us emitted a continuous sound, while [our transit] outsang everything else, and . . . could be heard distinctly at the distance of fifty yards."

Jackson's journals, while amply descriptive, seldom revealed deep feelings, but an exception was his climb to his first cliff house. It hung about 800 feet above him in Mancos Canyon, and the sighting as evening camp was made sent all hands clambering upward. They all tired and dropped out except for Jackson and Ernest Ingersoll, who found ancient toe- and handholds in the last 50 feet of wall as night came on. Attaining the terrace before the ancient door and windows, he looked down and "our campfire glimmered like a bright little star." "It was worth everything I possessed to stand there and to know that, with Ernest Ingersoll, I was surely the first white man who had ever looked down into the canyon from this dwelling in the cliff."



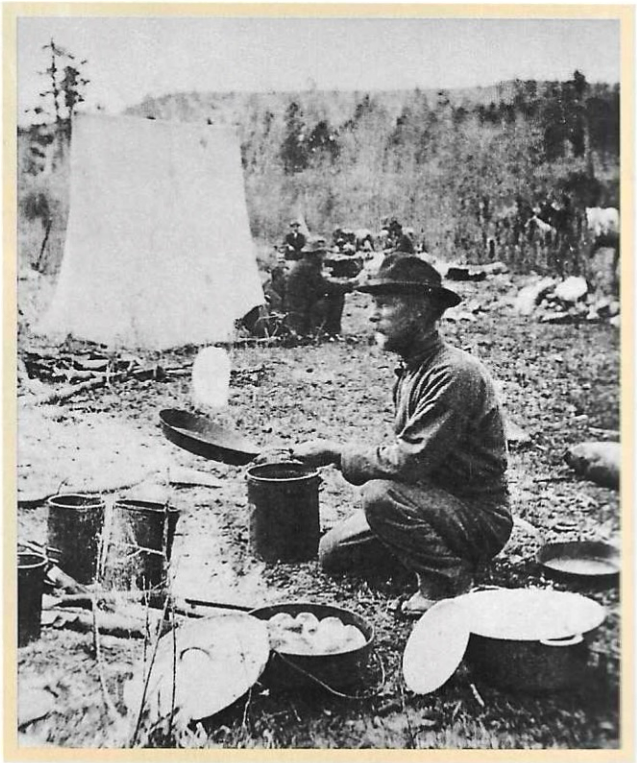
COLORADO HISTORICAL SOCIETY

MOUNT OF THE HOLY CROSS was a legend before Jackson in 1873 got the first views of it—perhaps his most famous pictures. A screen of clouds kept Will guessing until at last he topped a ridge and "stood face to face with the Holy Cross in all of its sublime impressiveness." Members of Denver's Jackson Color Camera Club display their versions. Mountaineer Carl Blaurock, center, remembers when Will was persuaded in 1940 to let the club honor him by using his name. He has one of Jackson's Holy Cross plates, which Will confessed to touching up in "a spot or two."

UNITED STATES GEOLOGICAL SURVEY PHOTO LIBRARY (BELOW); BRIGHAM YOUNG UNIVERSITY

SCOUTING out a new land, members of the Hayden Survey pause for a picture before their 1870 sweep across southern Wyoming. Dr. Ferdinand V. Hayden, physician turned field scientist, sits behind the table at center. Jackson, who set up the shot for an assistant, stands at right.

With annual appropriations from Congress, such surveys mapped and cataloged the West when it "was still largely uncharted territory from a scientific point of view." Veteran Hayden hands included "Potato John" Raymond (right), so named for his frustration in trying to boil potatoes at 12,000 feet. Here he flips a flapjack—with the help of Will's paintbrush, which froze in air what a long exposure could not.



THE COMPLEXITIES of photographing such scenes with the pioneer wet-plate process required speed, the luck of an alchemist, and the dexterity of an acrobat.

First, the weighty box of a camera must be set up and the subject framed and focused. Then the photographer must retire to his darkroom (in the field, a lined tent or portable hooded box) and prepare his glass plate: Clean it with cotton flannel and a brush, coat the front side with viscous collodion, then immerse it in silver nitrate to make it light sensitive. Wipe the back of the plate clean and insert the plate into a light-tight holder. Insert the plate into the camera, then expose it by removing the lens cover (say, for 30 seconds at f/32 in reasonably good midday light). Recover the exposed plate from the camera with the holder, hurry into the darkroom or tent, and immerse the plate in developer; if you have done each step absolutely right, you now are rewarded by an emerging image.

And if not, start all over again. In the sense that results were immediate—good or bad—it was a sort of primitive Polaroid. The entire procedure took about half an hour. Ten exposures was a good day's work, 15 outstanding.

To appreciate what Jackson did, photographer Jim Amos and I arranged a field trip with a modern-day wet-plate photographer. Doug Munson's Chicago Albumen Works in Housatonic, Massachusetts, has earned a national reputation for making prints from historic glass-plate negatives on historically authentic albumen (egg-white-coated) paper. In his photo labs he has mastered the demanding process that Jackson followed.

Our first choice for Doug's wet-plate recreations was 10,000-foot-high Seneca Lake in Wyoming's Wind River Range. In 1878, the Hayden Survey's last year, Jackson had exposed some crisp scenics across Seneca Lake and its small island toward crowning Fremont Peak. To get to the site, we enlisted the packtrain help of the nearby Box R Ranch, because the area lies within the Bridger Wilderness, reachable only on foot or horseback. The need to pack at least 150 pounds of cameras, tripods, glass plates, darkroom tent, and other necessaries made horsepower the attractive option. On a mild September day we wound upward for five hours through conifers and amid far vistas to a campsite just below the lake, then climbed toward Jackson's probable vantage point in the sun's late light. Twenty minutes of scurrying search ended with high excitement—we got an exact match of foreground details in one of Jackson's shots with what lay before our eyes. It was as if we could see the imprints of his tripod!

Next day, ice still rimmed meadow pools when Doug headed for the high ground where he would do his day's work, his weighty kit aboard a calico mule named Patches. He soon had the bright red darkroom tent up and arrayed with tank, trays, and suspended water bottle. His 11-by-14 fugitive-from-a-museum camera, festooned with its black viewing cloth, stood on a granite shelf, framing what Jackson had framed. Jim Amos and Colorado Historical Society photographer David Diaz Guerrero unlimbered state-of-the-art Nikons to document this exercise in obsolescence.

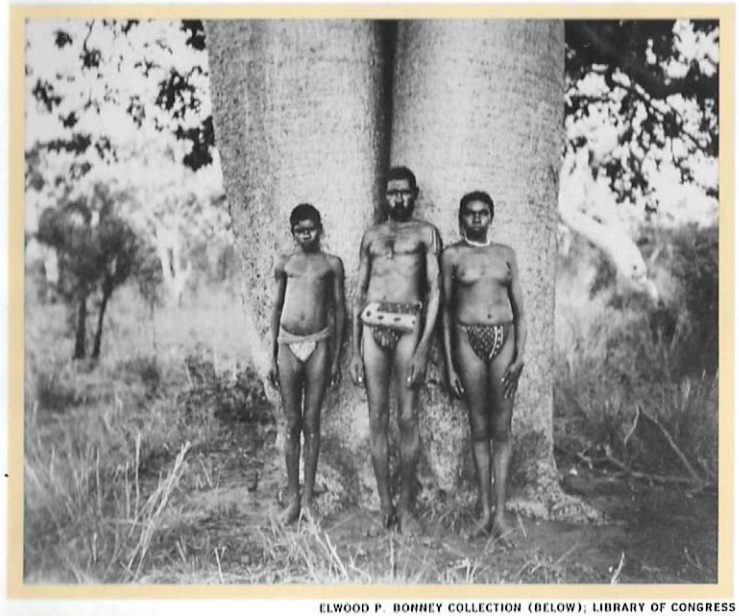
But through the day, things go mostly wrong. Fog and striations on the early plates, virtually no coherent images. Try a different batch of collodion (perhaps this one hasn't aged enough), use more restrainer in the developer, try less restrainer. Check water acidity—has acid rain affected the local water source? Noon comes and goes; Doug labors on, increasingly huffing the hundred or so uphill yards between darkroom tent and camera.

Finally, as I crouch in the tent's eerie red light and watch Doug's practiced swishing of exposure No. 9 in the developer, the silver-sunbeam magic of the old black-and-white process begins to work—the blank plate assumes a recognizable reality. But the quality is still short of Doug's standards. Only later will he find the answer: "When I got back to a motel in Jackson, Wyoming, I set up my developing kit in the total darkness of the bathroom—and the problem was solved!"

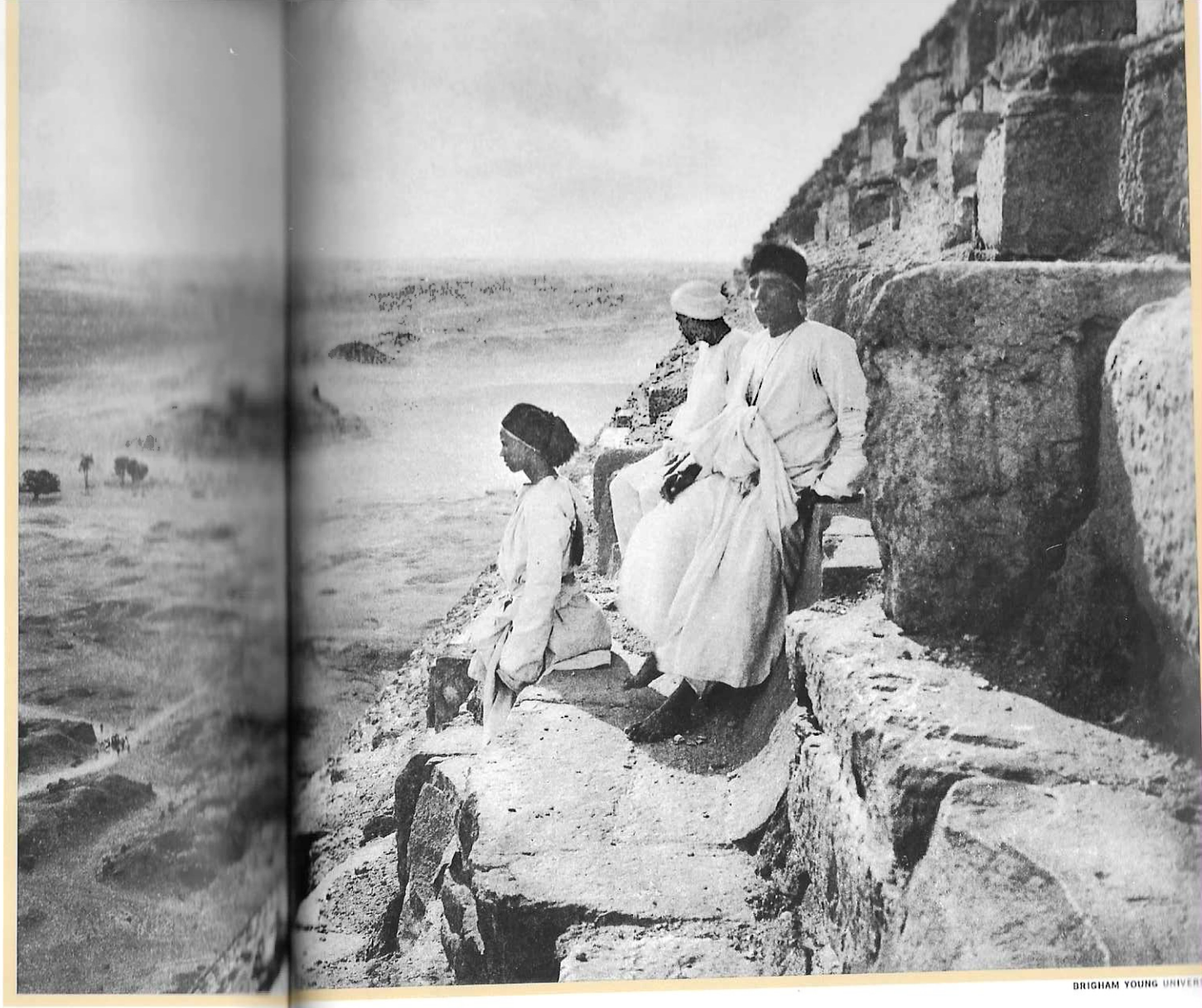
Though the tent fabric adequately filtered Massachusetts' near sea level atmosphere, it could not stop the additional radiation that penetrates Wyoming's high clear air. Doug went on to the Grand Canyon of the Yellowstone, another Jackson site, and at last got first-rate photos of the Lower Falls there.

Jackson had similar troubles, even in his last year with the survey, in that same Wind River country. From his August 1878 journal: "Head of Popoagie - Wind River Mts. under Wind River Peak. First plate exposed looked bad, wavy lines throughout film as tho' collo. was at fault. Image dev. rather thin & weak. . . . Took my traps to a point on the lower lake

he visited four continents in 1894-96 as photographer of the World's Transportation Commission. Jackson took the opportunity to widen his marketable scenes—Tunis, the ruins of Carthage, a dizzying look from Egypt's Great Pyramid (right); the paddies, tea plantations, and panoplied elephants of Ceylon and India; New Zealand's hot springs and Australian Aborigines (below); China, Japan, Siberia. He returned to find his Denver studio foundering and tried to recoup with a lecture tour (bottom) that didn't work. He solved his dilemma by swapping his huge store of photos for stock ownership and a job with Detroit Photographic Company, soon to become Detroit Publishing Company.

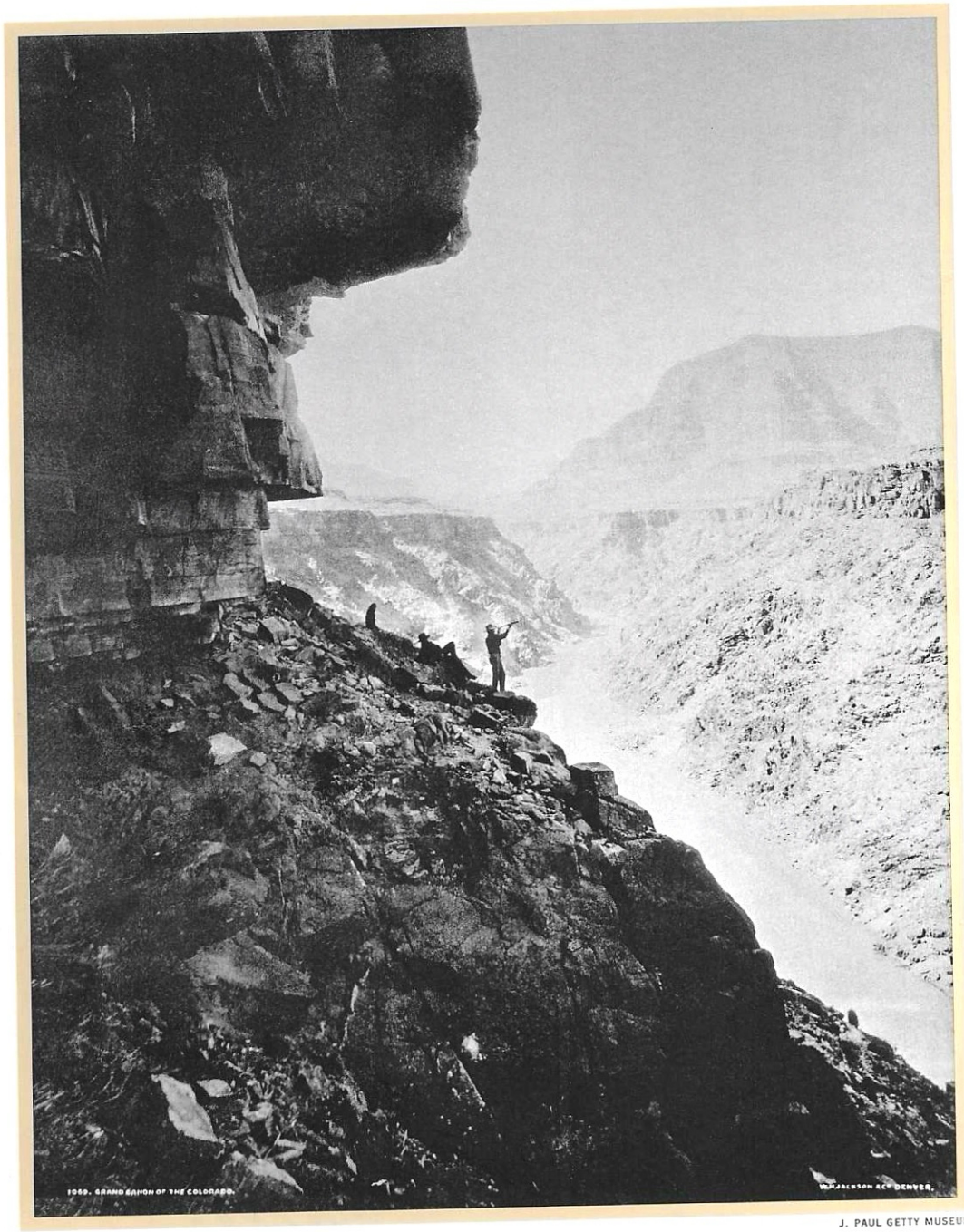


ELWOOD P. BONNEY COLLECTION (BELOW); LIBRARY OF CONGRESS



BRIGHAM YOUNG UNIVERS

CAMERA that framed the grand tour, a 6½-by-8½-inch Blair, survives in the museum at the headquarters of Yellowstone National Park. Given to Grand Teton National Park by Jackson grandson Donald McLeod of Detroit, it came to Yellowstone in a sorting out of Jackson photographs and Thomas Moran paintings. Searches have turned up no authentic cameras from Will's Hayden Survey days, when he was also experimenting with rubber-band-actuated shutters and a rotating 360-degree camera using paper-roll film that he coated himself. He got the latter idea at the Centennial Exposition in Philadelphia in 1876.



J. PAUL GETTY MUSEUM

ABYSSAL VASTNESS of the Grand Canyon comes through in an 1883 shot. Though he favored the Western U. S., Jackson photographed in many states, as well as Canada, Mexico, and Cuba. But his best efforts could not counter a confessed improvidence that frustrated financial security.

from which I expected to make some views but the P.M. was so windy I could do nothing. Spent most of P.M. fixing up 11/14 camera & dark box. . . . Hoggie, the mule that carried the pack, traveled so roughly that . . . I found the glass all smashed to bits & all one side of the bath holder punched full of holes. It is going to bother me now to replace it. Spent two or three hours in general repairs. I dont think I ever had so inconvenient an outfit. . . ." Even for a master practitioner, it never got easy.

IT WOULD get easier, though. Early in 1879 Congress combined the several competitive annual surveys it had been funding into the United States Geological Survey, and Hayden lost the hotly contested leadership of it, first to Clarence King, then to John Wesley Powell, conqueror of the Colorado (and later a founder of the National Geographic Society). There was no provision for a staff photographer, so Jackson sought new work—presumably less arduous than the Hayden forays. At the same time photography began to move beyond cumbersome, temperamental wet plates into an era of precoated dry plates and more portable cameras.

Railroads continued to hold a fascination for Jackson. Preceded by letters of recommendation from rail magnate Jay Gould, he arrived in Denver in 1879 to open a studio, hoping to obtain lucrative photo assignments from the ever expanding railways: "Denver was the place. I liked it there, the climate, the splendid mountains. I liked the people. . . ." Also, Western railroads were headquartered there, notably the Denver & Rio Grande, for which he soon was photographing, traveling about grandly in the president's private car or with his own special engine and mobile photo lab. This was far easier, indeed, though Jackson did not hold back from scaling a peak or canyon wall for the spectacular shot.

Soon he was getting jobs from other Western lines, then in the East. There was travel aplenty for his whetted taste, to every region of the U. S., to Canada and Mexico. Between trips there was the studio to see to and family life in Denver. It would have been the best of worlds, except that his studio, for all his enterprise, sank steadily into debt.

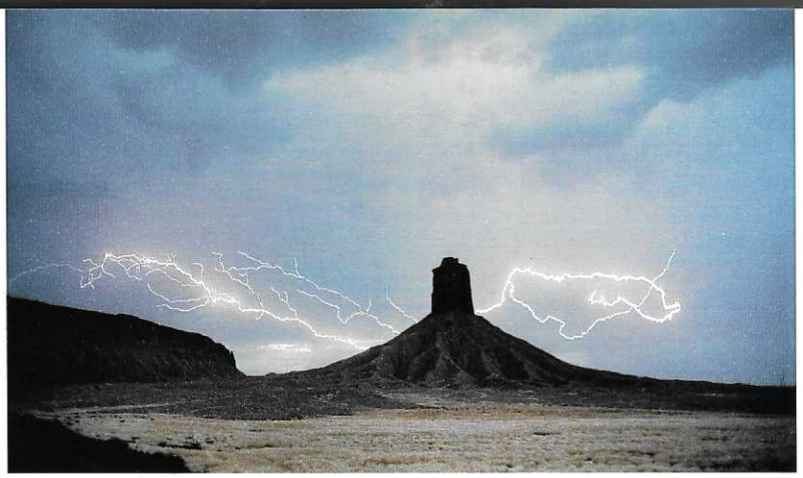
Then came a chance to make things better—and to see even more far places: In 1894 he was appointed photographer for the World's Transportation Commission. Brainchild of Joseph Gladding Pangborn, a spellbinding Baltimore & Ohio press agent, the commission would draw on some $100,000 contributed by industrial magnates to travel abroad and study the world's railroads. It had impressive credentials, a grand send-off, and no clear purpose. Other commission members tried to pin Pangborn down on what they were supposed to do, but Jackson never had that problem. He was a photographer; he would take pictures.

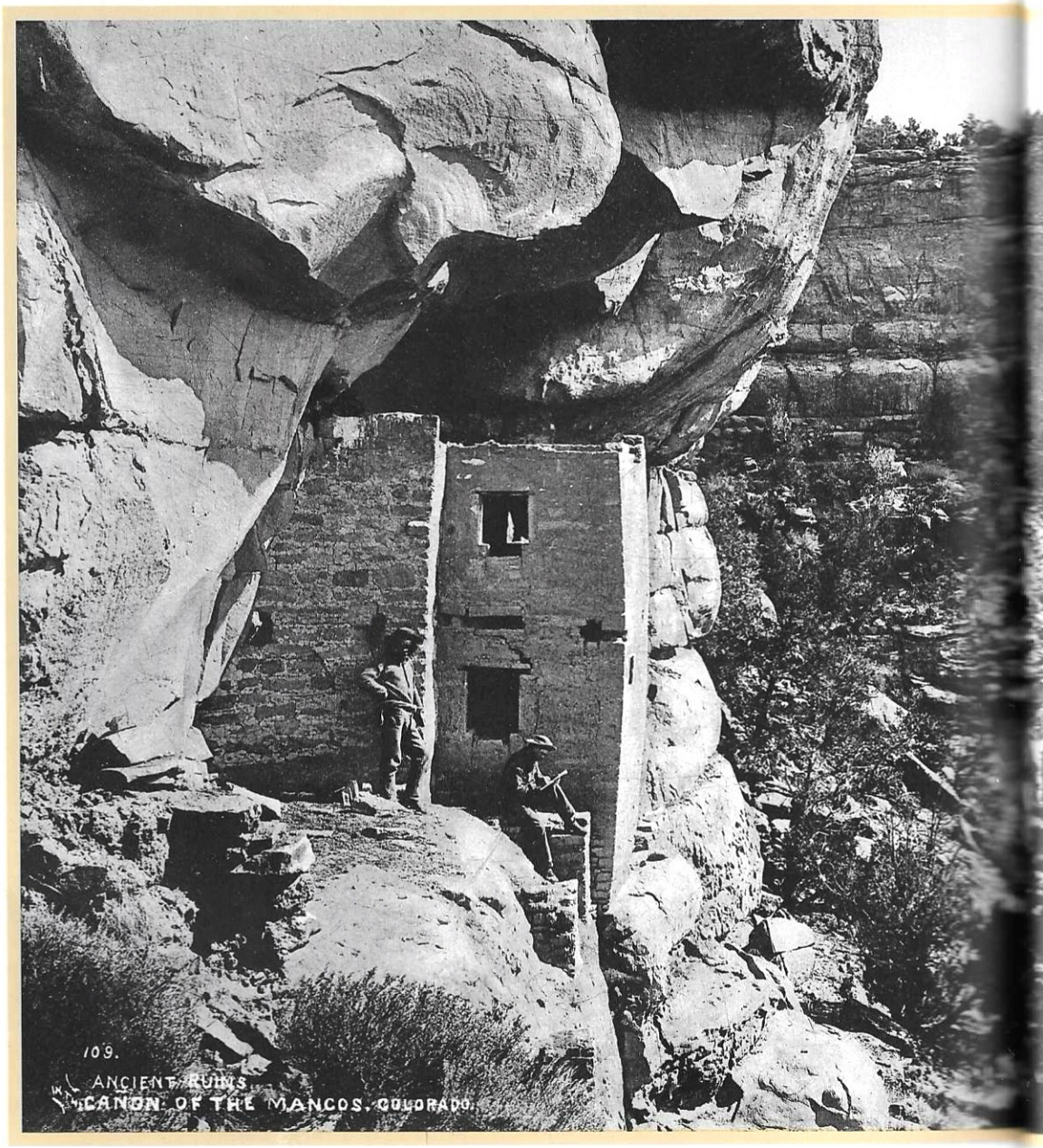
Across far lands and seas they went—Europe, North Africa, Asia, Australia—often in style, enjoying varying degrees of pomp. In India there was a durbar held by the Maharaja of Jammu and Kashmir, where Jackson's refusal to wear a Prince Albert coat turned Pangborn "grouchy toward me all day."

From China and Korea Jackson entered the Empire of the Tsar, visited a prison camp, and photographed convicts at work on the Trans-Siberian Railroad. Before winter's freeze-up he traveled in a flat-bottomed sternwheeler captained by a New England-born, Mississippi-trained virtuoso of profanity who was "damned proud to have some folks from home to visit with." Silent as to photographic problems posed by the subarctic cold, Jackson noted that he was barred from taking general panoramas "because Lieutenant had been instructed to allow nothing that did not have a distinctive railroad motive."

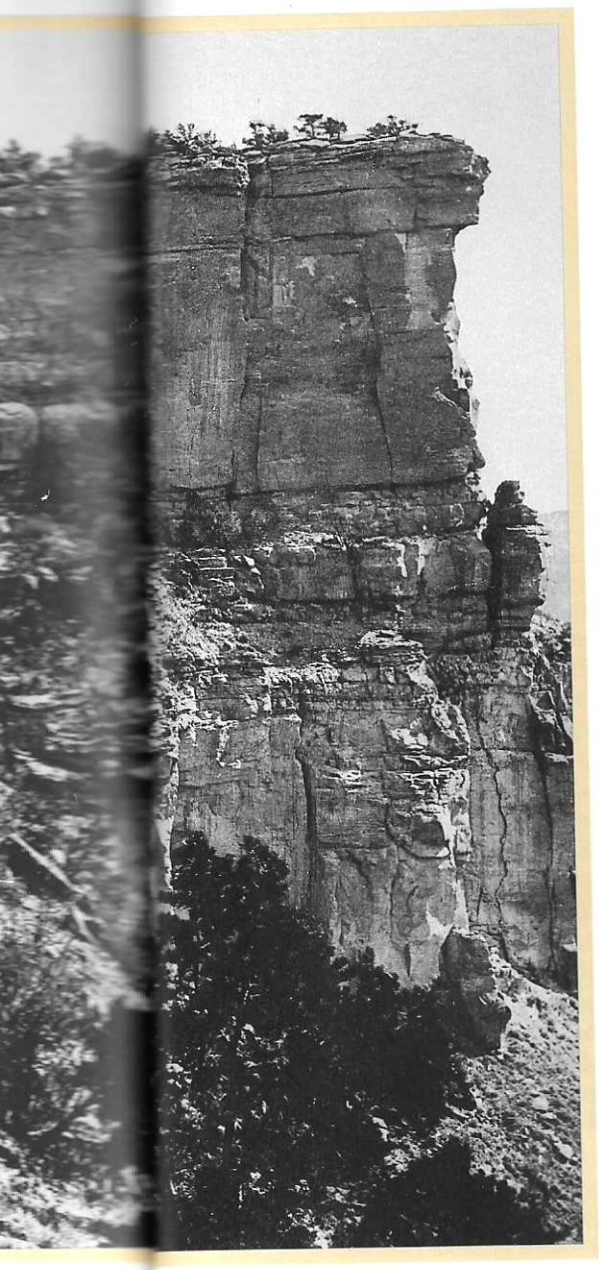
Because the railroad wasn't yet finished, he crossed Siberia by sled during six midwinter weeks, when frozen rivers became roadways for relay teams of shaggy little ponies. He shared a sled with the ponderous Pangborn on hummocky ice, "bobbing us around like corn in a hopper." Cocooned in an oversize elkskin coat, felt boots, astrakhan cap, scarf, and mittens, he peered out with keen interest at passing freight sledges that kept the empire's commerce moving through subarctic winter: "We passed them at all hours of the night, when they had a ghostly aspect." He photographed princes, peasants, and log settlements not unlike those in the American West.

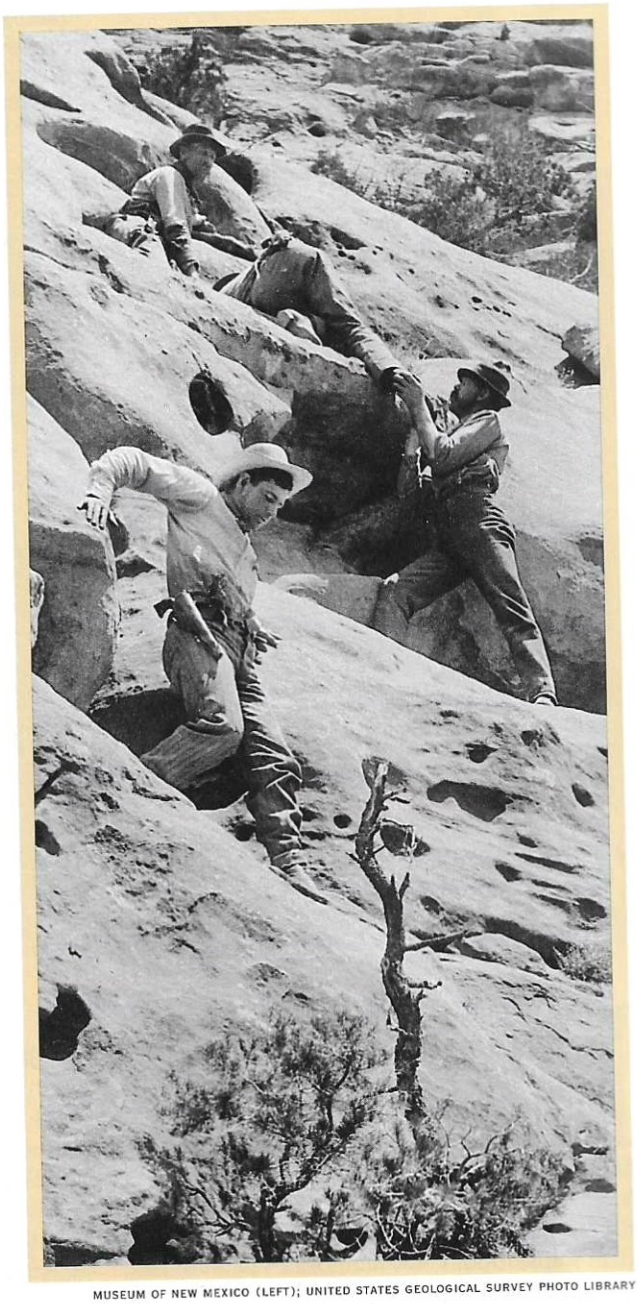
After 17 months the commission's money ran out in St. Petersburg, with the itinerary far from completed. Though he had received no salary, Jackson came home with a grand variety of salable pictures and the reputation that had come with his periodic travel reports published in *Harper's Weekly*. Soon he put together a lantern-slide lecture about it all: "100 Minutes in Strange Lands."




109.
ANCIENT RUINS
CANON OF THE MANCOS. COLORADO.

LIGHTNING autographs the sky over southwest Colorado's Chimney Rock, also called Jackson Butte for the man who first photographed the area's cliff dwellings. A canyon near Casper, Wyoming, also honors him, as do peaks in the Wind River Range and central Colorado Rockies near the Mount of the Holy Cross. He had a hero's burial in 1942 in Arlington National Cemetery, and a World War II Liberty ship bore his name.

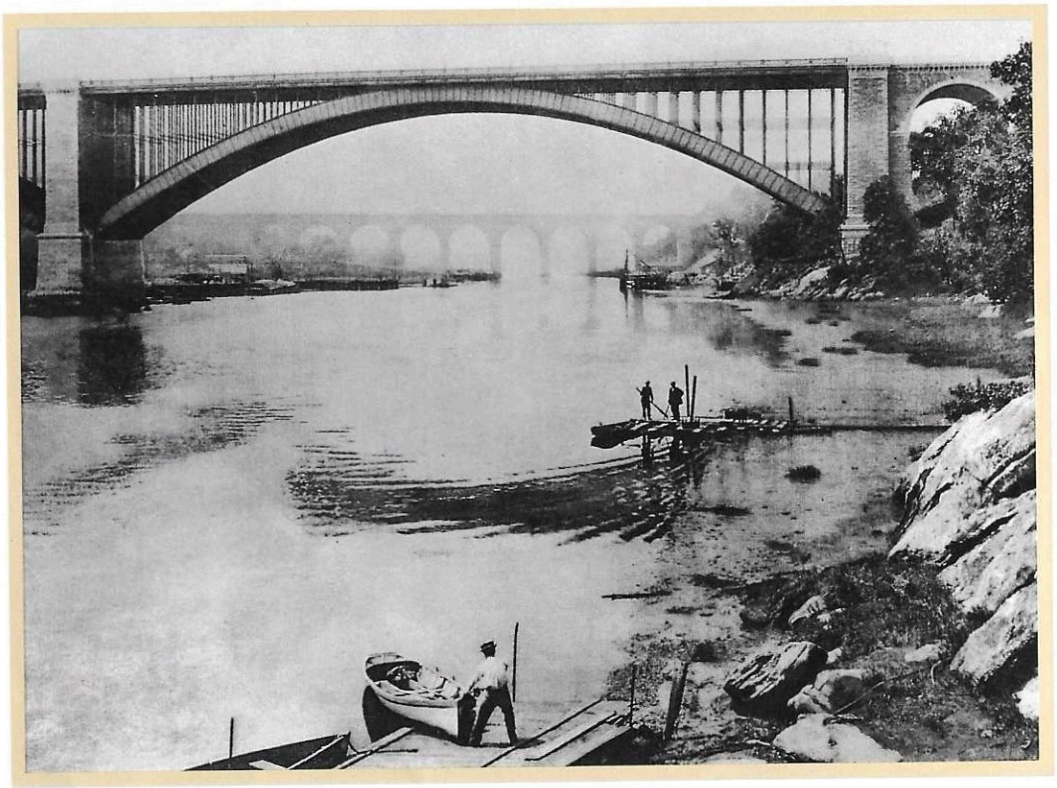




MUSEUM OF NEW MEXICO (LEFT); UNITED STATES GEOLOGICAL SURVEY PHOTO LIBRARY

HOUSE that Jackson photographed in 1874 still clings to its lofty niche (left) just outside Mesa Verde National Park, continuing under Indian proprietorship—in this case the Ute—by chance of a boundary line's placement. Guide John Moss, standing, and journalist Ernest Ingersoll shared in the experience, described by Will as "worth everything I possessed." He recalled that attaining the terrace, about 800 feet above the valley, was a clutch performance: "With the aid of an old dead tree and . . . some ancient footholds, we finally reached the bench."

TAMING THE LANDSCAPE, Jackson captured graceful calm in an 1890 view of New York City's Harlem River. Washington Bridge arches reflectively over sporting boatmen, in contrast to the unsettling sweep of wilderness scenes that first won him fame.



BACK HOME in Denver, Jackson found his studio still struggling. He solved the problem in 1897 by joining a firm that would become the Detroit Publishing Company, receiving $30,000 in cash and stock in a swap for his huge inventory of photographs. A catalog of illustrations from around the world was the firm's ambitious goal, including a print of just about any subject you might want, Niagara Falls or the Great Pyramid, copies of Rembrandts or "Washington Crossing the Delaware." Picture postcards were a major line. A secret lithographic process, whereby hand-tinted prints could be mass-produced, rivaled some of the best color work today.

In 1903 Jackson quit commercial field photography to supervise his company's production. He became a stay-at-home family man, took up golf, and lived perhaps the quietest two decades that his long life would know. His wife, Emilie, died in 1918, and in 1924 his firm went bankrupt; Jackson, alone but still healthy at age 81, decided to "retire," first living in Washington, D. C., and from 1929 onward in New York City. But he never really retired, accepting research work with the Oregon Trail Memorial Association, traveling the old trails each summer, doing paintings, articles, interviews, setting down his life's story, carrying on a prodigious correspondence.

AS I HAVE WRITTEN this story about Jackson, there has been a presence looking over my shoulder, a zealous amateur historian and collector of Jacksoniana, the late Elwood P. Bonney of Madison, New Jersey. His trove of letters, photographs, picture portfolios, scrapbooks of newspaper clippings was made available by his family. So comprehensive were the "Bonney papers" that I soon was having imaginary conversations with Elwood, hearing him describe a typical visit with Jackson

GENTILITY ON TOUR, decorous anglers line the Rio Grande at Wagon Wheel Gap, Colorado, an 1881 shot made during a promotional excursion to provide scenics for the Denver & Rio Grande. Private railcar contrasted to rugged earlier travels.

MUSEUM OF THE CITY OF NEW YORK (OPPOSITE); COLORADO HISTORICAL SOCIETY

at his New York hotel in his final years:

"When I'd knock on his door at the Latham, he'd always respond with a cheery 'Come, come.' I'd find him busy, often at his easel, set to catch the north light from his ninth-floor window. He'd ask my comment on the painting, some Western scene, say Independence Rock or covered wagons fording the Platte, and we'd talk about it. His memory was keen, and he had a way of making you see the places he'd been—the things he'd done.

"If I called before lunch, we'd adjourn to the Automat, where I'd have my standard—cream cheese and marmalade on raisin bread—and he'd have his—a slab of pie (he liked apple, pumpkin, lemon meringue) and milk or coffee. He could eat almost anything. If I called in late afternoon, he'd offer a 'snorter' or 'dust-cutter' of Scotch someone had given him. He'd lift his glass and say, 'Mud in your eye—whatever that means.' Then we'd go to dine at Child's or the Great Bear."

IN 1940 JACKSON NOTED with satisfaction that the GEOGRAPHIC had recently published one of his historic Yellowstone pictures. Yellowstone, the linchpin in Jackson's career, was pivotal in his thoughts, and it became pivotal in his country's thinking this past summer when wildfire swept more than a third of its 2.2 million acres (see story on page 255).

The sweep of cyclic surface fires has no effect on the geologic wonders for which the park was created, themselves driven by the lingering fire of an ancient volcano. "The basic plumbing is still there," park historian Timothy Manns commented in reference to the geysers, the hot springs, the Yellowstone River's two-stepped, 417-foot plunge into the park's awesome namesake canyon. As flames closed on park headquarters at Mammoth Hot Springs, ultimately stopping only 1.2 miles short, Tim's concerns had focused on moving 26 Jackson photos and 23 Thomas Moran

paintings and sketches from museum walls to safe storage.

Fire, of course, is just one agent of change in a landscape that may seem changeless, yet is never the same. On an earlier visit to the park I had asked Tim Manns to help me find the site of a famous Jackson shot of his friend Moran on the hot springs' Jupiter Terrace—and got a discouraging word: "You'll never find the exact spot—because it's changed. You're dealing with land surface that's among the newest and fastest changing on earth. The minerals in that water can build up eight inches of new deposits a year, so what we're seeing now is quite different from what Jackson saw."

The challenge of photographing the recent fires would have excited Jackson, as did a problem that he faced at Tower Falls in 1871. He needed a picture from the base of the 132-foot falls but could get his cumbersome darkroom box no nearer than the top. So he prepared his wet plate there, backed the plate holder with wet blotting paper, scrambled down to his waiting camera at the base, and made an exposure. He wrapped the exposed plate in more blotting paper and clambered up to develop it in his darkroom box before it could dry. He repeated the round-trip four or five times, ending the day exhausted but happy with his pictures.

The intrusion of roads and inns and stables and gas stations into Yellowstone has marred limited vistas and stirred controversy. On the conservation side, protecting wildlife has produced its own problems. As the park shifts from sight-seeing buses to snowmobiles after hosting 2.5 million visitors in its 117th summer, debates swirl over proliferating elk and buffalo that invade adjoining cattle range.

And where have the bears gone? Deeper into Yellowstone wilds, say park wildlife specialists, citing a program of weaning grizzly and black bear from decades of scavenging park garbage dumps, making them wild and free again. But critics raise charges of deliberate removal—even elimination—as policy, and debate over numbers of grizzlies ranges from an optimistic 350 to less than half that figure.

The hazards of facing a grizzly never change. Jackson found those hazards to be "spine-tingling" on his last visit to Yellowstone with the survey in 1878. Beside the Yellowstone River, a great silvertip confronted Dr. Hayden and Will: "His eyes glared angrily, and the grip of his claws showed that he was preparing to spring." Will dropped to one knee and fired a rifle shot: "It was one of those times when a man acts first and thinks—if he is fortunate enough—afterward. . . . Without sound or struggle the grizzly crumpled in the snow. . . . Not until the skull was bared did we find that the shot had entered one nostril and crashed through his brain."

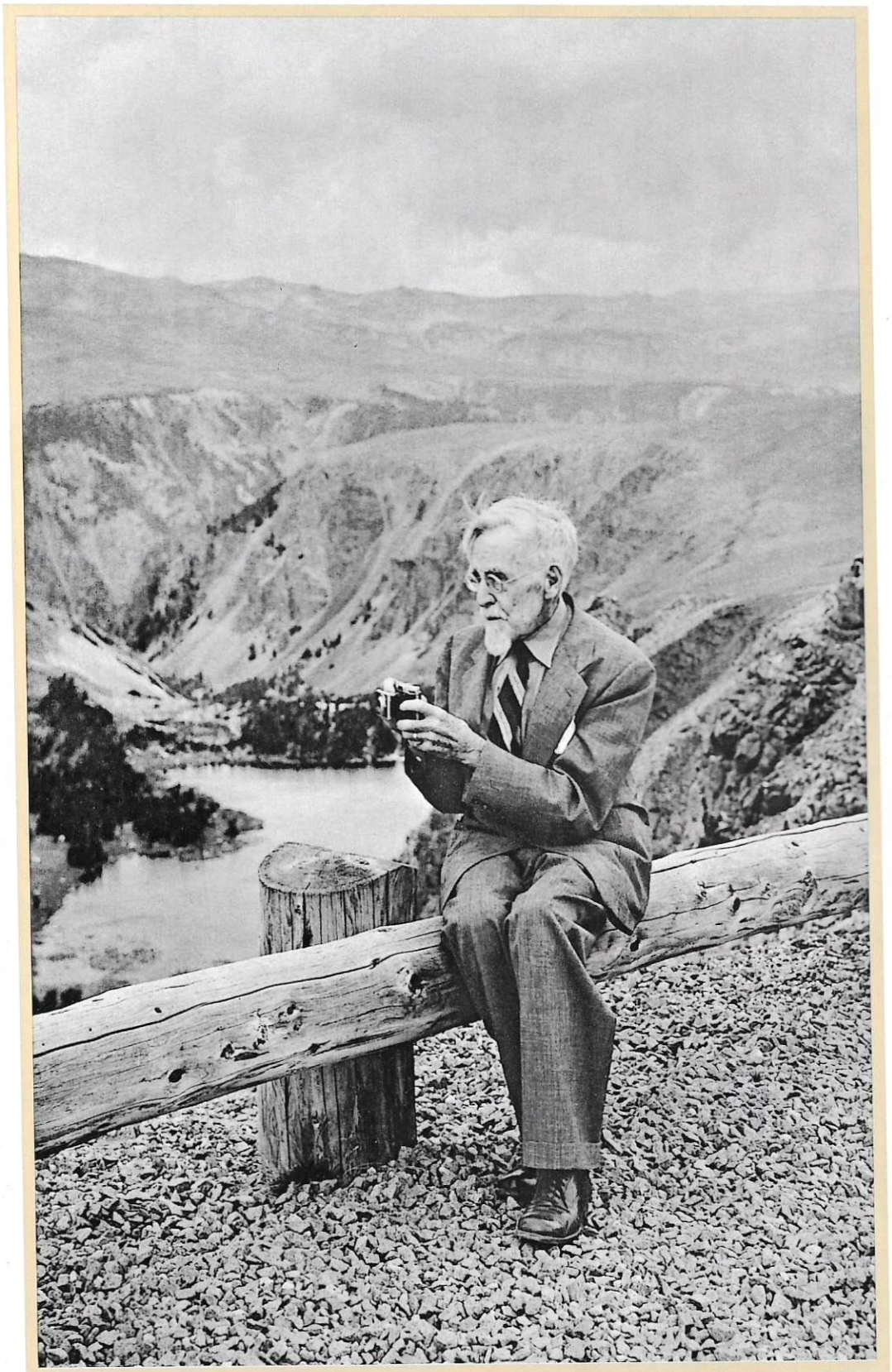
LIFE COME FULL CIRCLE finds Jackson near Yellowstone at 97, snapping color pictures with his new 35-mm Kodak Bantam, rounding out his hands-on experience with the major advances in photography's first century. His annual Western trips renewed him: "Spring fever is rising and sometime next month will figure on plans for the getaway."

Park planners today wrestle the bear of too many people and cars, not enough funds and facilities. Staffs stretch thin, interpretive specialists double as administrators, rangers carry side arms to deter crime.

But despite such problems, Yellowstone prepares for another season of offering millions a wilderness experience. And it was Yellowstone that sowed the seed of a national-park concept now spread around the world—a rich legacy of perpetuating the wild domain.

In the words of Yellowstone historian H. M. Chittenden, it was Jackson's pictures and Moran's sketches that tipped the scales in Congress back in 1872 toward creating the first national park: "They did a work which no other agency could do and doubtless convinced every one who saw them that the regions where such wonders existed should be carefully preserved to the people forever."

DURING that historic 1871 summer in Yellowstone, an Army expedition covered much of the same ground as the Hayden Survey. The Army party also had a photographer, T. J. Hine. But Hine got back to his native Chicago just in time for his negatives to be consumed in the Great Chicago Fire. And an obscure photographer with the Hayden Survey vanished afterward into his native Montana with his few frames. Will emerged from that summer's work as the only one of the three to win acclaim for his published photographs—and they were good and they were effective. That Jackson luck again? Will thought so. He acknowledged a debt to Mrs. O'Leary's cow. □



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